4-Seam, 3-Bridle Survey Bottom Trawl Specifications

Northeast Fisheries Science Center

Standardized Reference Manual
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Components of the Trawl

Trawl
- 4 seam & 3 bridle
- 400 x 12cm 4800cm
- Footrope = 2700cm
- Headrope = 2424cm (including wing end extensions and shackles)

Twine Size and Thickness
- 12cm (kc), 4mm regular, dark green, braided polyethylene
  in top & bottom wings in 1st bottom belly
  in bunts in 1st & 2nd side panels
- 6cm (kc), 2.5mm regular, dark green, braided polyethylene
  in square in 2nd belly aft to codend
  in 3rd & 4th side panels

Section Joining Twine
- 12cm mesh sections joined by double 2.5mm Orange P.E.
- 6cm mesh sections joined by single 2.5mm Orange P.E.
- 12cm mesh to 6cm mesh joined by single 2.5mm Orange P.E.
- Selvedge joined to wing sections by single 4mm dark green, braided, P.E.

Selvedge
- Selvedge cut from 12.0cm (kc), double 4mm dark green, braided polyethylene,
  Euroline with yellow tracer
- 8 meshes deep on the bottom wing bars
- 5 meshes deep on the top wing bars
- 5.5 meshes deep across forward square
- 5.5 meshes deep across forward 1st side panel
- 2.5 meshes deep across forward 1st bottom belly
- All jibs (top, bottom and side)

Gores
- 4 full meshes will be put into each gore
- Port Top= Orange 2.5mm P.E. & White #48 nylon
- Port Bottom= Double Orange 2.5mm P.E.
- Starboard Top= Green 2.5mm P.E. & White #48 nylon
- Starboard Bottom= Double Green 2.5mm P.E.
Hanging Lines
Hung using #96/108 white, braided, nylon twine

Headrope
- ¾” combination rope, IWRC, polypropylene clad with stainless steel core
- ¾” stainless steel heavy wire rope thimbles
- Top Wing End Extensions: ½” stainless steel wire & ½” stainless steel heavy wire rope thimbles
- Headrope is 2058cm eye to eye
- The headrope eye, the top jib end meshes and the upper wing end eye are all put in a ¾” Blue Line bow shackle with the 174cm headrope extension of ½” s.s. wire coming from it
- The headrope extension of ½” s.s. wire is 174cm
- The total headrope length from eye to eye is 2424cm, including port & starboard ¾” bow shackles (9”) and 174cm, ½” s.s. wire, extensions
- A ½” hammerlock goes on the end of the 174cm extension
- 3 Nokalon #508, 8” center hole, orange trawl floats go on each 174cm extension separated by 4” x ½” rubber cookies

Wing End (Up & Down Lines)
- 5/8” combination wire rope, IWRC, polypropylene clad with stainless steel core
- 5/8” stainless steel HWR thimbles
- The upper wing end is 552cm eye to eye
- The lower wing end is 460.5cm eye to eye
- The top jib eye goes into the ¾” Blue Line bow shackle on the top
- The two side panel eyes and the middle jib end meshes are put into a ¾” Blue Line bow shackle with the middle extension coming from it
- The middle extension is made of 5/8” s.s. wire with 5/8” s.s. HWR thimbles. It is 133 cm - 9cm (3/4” bow shackle) = 124cm eye to eye
- The lower wing end eye and lower jib end meshes are put into a 3/4” Blue Line bow shackle
- A 5/8” hammerlock goes on the end of both the middle and lower 124cm extensions

Floats
- 60 Nokalon #508, 8” center hole, orange trawl floats
- The floats are mounted vertically in two 30-float strings, with the first float of each string starting 50cm from the center of the headrope
- Float line is made of ¾” polysteel blue, with orange tracer, float rope
- The first 24 floats are mounted at 25cm on center and the remaining 6 floats are mounted at 50cm on center
- 3 floats are put onto each port & starboard top wing end extensions
Bolschline (Rubberline): 3 Piece
- 2436cm total length outside eye to outside eye (including hammerlocks, 6cm each)
- 5/8” stainless steel wire.
- Center Section: 842cm outside eye to outside eye
- Wing Sections: 791cm outside eye to outside eye
- 2-3/8” spacer cookies cover wire. 4” cookies cover sockets
- 198 2-hole orange hangers total; center 76; wings 61
- 1 link of 5/8” trawlex chain used as hangers to pass traveler through, spaced 60cm
- 40 chain-link hangers total; center 14; wings 13
- 2, 5/8” Crosby hammerlocks connect 3 piece bolschline sections
- 5/8” Esco sockets swaged on each end of bolschline sections
- 10, 5/8” wire clamps total; center 6; wings 2

Tailpiece
- Tailpiece diameter is 216 meshes x 16 meshes deep, of 6.0cm, 2.5mm
- Placed 10 meshes down from top of tailpiece; for attachment to codend.
- 31 rings 3.5” plastic, 1 ring at top center 3/8” x 3” stainless steel, sewn on with #96 braided nylon twine.

Codend Liner
- #504 knotless nylon, 1” stretched diamond mesh.
- 432 meshes across by 384 meshes deep.
- The 432x384 section of knotless webbing is machine sewn, the full length of webbing, selvedge to selvedge, to form a tube open at both ends.
- The knotless nylon tube is joined to 6cm, 2.5mm green p.e. webbing 216 meshes around by 5.5 meshes deep (215.5 mesh wide sewn into cylinder 216 mesh circumference).
- A 700cm in length joining rope is spliced into a 648cm circle and marked at 3cm intervals (216 marks).
- 6cm, 2.5mm green p.e. webbing cylinder and #504 knotless nylon tube is gathered and sewn simultaneously to the joining rope at each mark using #182 braided nylon twine.
  - 6cm 1:1 ratio (216 meshes to 216 marks).
  - #504 2:1 ratio (423 meshes to 216 marks).
  - #504 sewn through 3rd mesh from top
  - Webbing sections sewn to rope with 1 locking hitch and 3 half hitches.
- 6cm p.e. webbing on forward portion of liner is sewn 1:1 to aft meshes of tailpiece.
Codend
- Same webbing as selvedge, 12.0cm (kc), double 4mm P.E. Euroline
- 100 meshes in diameter & 75 meshes deep, from 2 panels of 54 mesh x 75 mesh
- 4 meshes in each gore, 2 from each webbing panel port and starboard.
- The codend utilizes 1” diameter gore ropes.
  - Gore ropes are to have eyes spliced on forward and aft ends
  - Forward End- 14cm inside eye length. Aft End- 10cm inside eye length
  - At the aft end, the gore rope eye should be flush with the rings; at the forward trawl end, the gore rope should extend 70cm (includes 14cm eye)
- 32 total zipper rings at forward trawl end to attach codend to tailpiece. 31 3.5” plastic rings, 1 stainless steel ring at top center 3/8”x 3”.
- 50 puckering rings total at terminus, attached 2:1. 5/16” x 2.5” stainless steel.
- Codend zipper line made from ½” polydacron rope, 650cm length.

Codend Ring Attachments
- Codend rings are attached on the forward and aft sections by #8 virgin polyester twine
- The forward trawl end ring attachment:
  - First row is 1:1 all the way around (108 meshes), 10cm bar length.
  - Second row is sewn with the following pattern, 10cm bar length:
    - Beginning at the TOP CENTER:
    - Five times » 2:1, 2:1, 1:1/ One time » 2:1, 2:1/ Ten times » 2:1, 2:1, 1:1/
    - One time » 2:1, 2:1/ Five times » 2:1, 2:1, 1:1
  - Third row is 1:1 all the way around (64 meshes), 15cm bar length to accommodate the rings. Rings attached 2 meshes per ring. 32 total rings.
- The aft ring end attachment:
  - Puckering Rings: 50, 5/16” x 2.5” stainless steel rings. Rings sewn on 2:1 with 8cm bar length

Codend Strengthening Straps, Splitting Strap & Bull Rope
- 5 straps around codend: 1 Lifting strap, 3 strengthening straps, 1 splitting strap.
- All straps attached by twine becketts.
  - Twine for becketts is 12mm virgin polyester.
  - Full circumference (other than top lifting strap stop 10 meshes from gore for reinforcement)
  - Spacing is 3 meshes x 1-1/2 meshes.
- Lifting strap is ¾” 12 strand, plasma rope, 650cm eye to eye. 20cm eyes connected by twine seizing.
  - Placed at 65 meshes from aft.
- Strengthening straps are 5/8” Samson Tenex-Tec, braided, 600cm eye to eye. 8cm eyes connected by twine seizing.
  - Placed at 25, 35, 45 meshes from aft.
- Splitting strap made from 1” Samson Tenex-Tec, braided, 600cm eye to eye. 8cm eyes connected by ¾” stainless steel, pear shaped, opening link.
  - Placed at 15 meshes from aft.
- Reinforcement is 12mm virgin polyester, 18cm mesh size.
  - 6-1/2 mesh deep, 20 meshes wide, All Bars taper.
  - Bottom edge knotted to codend webbing 12 meshes from top of codend, 10 mesh on each side of Port gore.
  - Spectacle consisting of two 2.5” and one 3” s.s. ring.
  - Top meshes of reinforcement sewn into 3” ring.
- Extension to 3rd belly is 925cm, 12 strand, plasma rope.
  - 8cm eye on aft end only.
  - Attached to lifting strap by 5/8” hammerlock.
- Bull rope is 1-1/8” 8 strand, braided, Samson “Ultra Blue”, 4267cm. 8cm eye on aft end only. Attach to splitting strap into 3/4” s.s. pear shaped link.

Chafing Mat
- 25L x 30W
- 6.0” kc, nylon
- Sewn at 33 mesh from aft, on underside of codend
- Seized on sides, each 7 meshes, using #8 polyester
Hanging Information

Twine Size- 12.0cm (knot center-knot center) 4mm Euroline, dark green, braided polyethylene.
Selvedge/Jibs are 12.0cm (kc-kc) double 4mm Euroline.
Bars hung at 105%

**BOTTOM**
24 ROUND MESHES @ 6cm = 138cm
in 23 spaces
6, 1B1M @ 10cm = 60cm
9, 2B1M @ 16cm = 144cm
12 BUNT BARS @ 105% = 151cm
48 WING BARS @ 105% = 605cm
14.5 JIB BARS + ½ @ 105% = 189cm
TOTAL WEBBING = 2436cm
EXTENSION = 133cm [124cm E.T.E (5/8" s.s. wire) + 9cm (3/4" Bow shackle)]

TOTAL FOOTROPE = 2702cm (see bolschline drawing for details)

**TOP**
28 ROUND MESHES @ 6cm = 162cm
in 27 spaces
6, 1B1M @ 10cm = 60cm
9, 2B1M @ 16cm = 144cm
36 WING BARS @ 105% = 454cm
22.5 JIB BARS + ½ @ 105% = 290cm
TOTAL WEBBING = 2058cm
EXTENSION = 183cm [174cm E.T.E (1/2" s.s. wire) + 9cm (3/4" Bow shackle)]

TOTAL HEADROPE = 2424cm

**WIND ENDS**

**LOWER**
BOTTOM - 14.5 JIB BARS + ½ @ 1.025 = 184.5cm
SIDE- 22.5 JIB BARS + ½ @ 1.0 = 276cm
TOTAL = 460.5cm

**UPPER**
TOP - 22.5 JIBBARS + ½ @ 1.0 = 276
SIDE - 22.5 JIBBARS + ½ @ 1.0 = 276
TOTAL = 552cm
HEADROPE HANGING RATIOS
2058cm eye to eye
12.0 cm (kc-kc) meshes along headrope
Bars hung at 105%
Wing End Up & Down Lines
Hanging Ratios
12.0cm (kc-kc) double 4mm, Eurol ine

Upper = 552cm eye to eye
Lower = 460.5cm eye to eye

22.5 Jib Bars+$\frac{1}{2}$
hung @ 1.0
upper and side
552cm eye to eye

22.5 Jib Bars+$\frac{1}{2}$
hung @ 1.0 on side
14.5 Jib Bars+$\frac{1}{2}$
hung @ 1.025 on bottom
460.5cm eye to eye
400x12cm. selvedge plan

12cm. double 4mm.

11.5

8(2B1M)
6(1B1M)

24 MESHES
400x12cm. Selvedge plan

12cm. double 4mm.

8(2B1M)  11.5
6(1B1M)  28 Meshes
NOTES:
Total Headrope Length = 2424cm ETE
including port and starboard 3/4" bow shackles and
174cm, 1/2" s.s. wire, extensions.

Upper wing end length is 685cm ETE
including the middle 3/4" bow shackle and
124cm, 5/8" s.s. wire, extension.

Lower wing end length is 592cm ETE
including the lower 3/4" bow shackle and
124cm, 5/8" s.s. wire, extension.

3 Nokalon #508, 8" center hole, orange
trawl floats are put onto each top,
174cm extension.
The floats are separated by 4" x 1/2"
rubber cookies.
FLOAT ARRANGEMENT

NOTES:
All floats are Nokalon #508
8” center hole, orange trawl floats
Bolschline Center Section
Spacing

842cm Length, outside eye/outside eye

76 Snowmen
14 Hangers,
6 Clamps total

Cut wire 827.5 cm
String cookies from center
Then swage sockets
Bolschline Wing Spacing

782.6 cm Length, outside eye/outside eye
Cut wire 766.2 cm

61 Snowmen  13 Hangers  2 Clamps

Includes 9 cm hammerlock
100x75 Mesh Codend

2 panels of 12cm (knot center), 4mm thick double Euroline Webbing. 54 x 75 meshes each, gored together with 1" gore ropes. 4 meshes in each gore (2 mesh from each panel).

Center Mesh forward, aft, top and bottom marked with orange poly twine.

Top of chafing panel 33 mesh from Aft
Seized every 7 meshes
Chafing Panel is 25x30 meshes of 6" kc white nylon webbing
Tailpiece Rings Detail

32 rings total (31 plastic 3.5” , 1 steel @ top center 3/8” x 3”)
Attached using #96 braided nylon twine. 10 meshes down from top of tailpiece.
Tied on every other mesh with 10cm bar length
Start on first mesh next to gore (either side). 3 10cm mesh to 1 ring. 16 rings top and bottom.
Forward Trawl End
Zipper Rings Detail

32 rings total (31 plastic 3.5”, 1 steel @ top center 3/8” x 3”)
Attached using #8 polyester twine

FIRST ROW:  1:1 all the way around (108 meshes), 10cm bar length

SECOND ROW:  10cm bar length, following pattern:
Begin @ Top Center
  2:1, 2:1, 1:1 Five Times
  2:1, 2:1 One Time
  2:1, 2:1, 1:1 Ten Times
  2:1, 2:1 One Time
  2:1, 2:1, 1:1 Five Times

THIRD ROW:  15 cm bar length (to accommodate ring)
1:1 all the way around (64 meshes)
2 meshes per 1 ring
Aft Codend Puckering Rings

50 stainless steel rings. 5/16” x 2.5”
Rings sewn on 2:1, (25 rings per panel)
8cm bar length
Codend Strengthening Strap Detail

925cm Extension to 3rd belly
\(\frac{3}{4}\)" Plasma Rope connected by \(\frac{5}{8}\)" hammerlock

Reinforcement with 3 ring spectacle
12mm Virgin Polyester
12 mesh from top

Lifting Strap
\(\frac{3}{8}\)" 12 strand Plasma Rope
650cm ETE (20cm eyes)
eyes connected into \(\frac{5}{8}\)" hammerlock

Strengthening Straps
\(\frac{5}{8}\)" Samson Tenex-Tec
600cm ETE (8cm eyes)
eyes connected by seizing

Splitting Strap
1" Samson Tenex-Tec
600cm ETE (8cm eyes)
eyes into \(\frac{3}{8}\)" pear shaped s.s. link
12mm Virgin Polyester
18cm mesh
6 1/2 mesh down
20 mesh across
(10 top, 10 bottom)

Port top

Spectacle:
two 2.5" and one 3" s.s. rings
Top meshes of reinforcement sewn to 3" ring

underside

6 1/2

12 mesh down

63

knotted to webbing along lower edge only
(top and underside)
NEFSC 4 Seam, 3 Bridle Survey Trawl
Rigging Profile

- 174 cm
- 124 cm
- 75 cm - 97 cm
- 60 ft.
- 60 ft.
- 60 ft. includes swivel
- 3/4" galv. IWRC
- 9/16" galv. IWRC
Top Wing End Extension Detail

- 3/4" Bow Shackle
- 1 3/4" conveyor cut cookies, cover wire to keep floats near end of extension.
- 4" cookies
- 3-Nokalon 8" center hole orange trawl floats
- 174cm Eye to Eye
- 1/2" galv. IWRC
- 9/16" galv. IWRC
- 1/2" Hammerlock
Middle Wing End
Extension Detail

3/4" Bow Shackle

124cm Eye to Eye
5/8" s.s. wire

5/8" Hammerlock

9/16" galv. IWRC
Lower Wing End
Extension Detail

3/4" Bow Shackle

124 cm Eye to Eye
5/8" s.s. Wire

Blueline Butterfly Plate #E26 and 14" Bunt Bobbin

9/16" galv. wire traveler

8 links 5/8" Trawlex (+5 hanging for adjustments)

5/8" Hammerlocks

3/4" Swivel

3/4" Shackles

4 links 5/8" Trawlex

3/4" galv. IWRC

5/8" Hammerlock

97 cm
Upper Legs Connection Detail

9/16" galv. 6x19 IWRC

5/8" Swivel

9/16" galv. 6x19 IWRC
Lower Leg Connection Detail

3/4" Blue Line Triangle Plate w/ 3 Swivels.
Plate Size medium
Fwd Swivel= 7/8"
Aft Swivels= 3/4"

5/8" Flat Link swaged into soft eye of idler

5/8" H.L.

28.5ft. Back Strop Extension
5/8" IWRC

5/8" G-Hook swaged into soft eye of extension

51ft. Idler
5/8" IWRC

9/16" galv. wire
IWRC

3/4" galv. wire
IWRC

5/8" H.L.
Door Rigging Detail

- 3/4" Triangle Plate w/ 3 swivels
- 5/8" Flat Link swaged into soft eye of idler
- 5/8" H.L.
- 5/8" G-Hook swaged into soft eye of extension
- 28.5ft. Extension 5/8" IWRC
- 3/4" s.s. swivel
- 5/8" H.L.
- 5/8" G-Hook swaged into soft eye of idler
- 51ft. Idler 5/8" IWRC
- 12ft. Back Strops 1/2" trawlex
- 2.2sq.m. Poly-Ice Oval Trawl Doors 550kg each
- 1.5m Idler connect, 3/8" Wessenteils Chain
- 5/8" Flat Link
- 5/8" H.L.
- 5/8" G-Hook swaged into soft eye of idler
Rockhopper Sweep Details

Center Section

- 890cm Eye to Eye.
- 3/4” 6 x 25 IWRC stainless steel wire.
- 3/4” ESCO stainless steel sockets.

- Drop Chains:
  - 60cm drop chain spacing.
  - 1st and last drop chains are 25cm from inside of socket eye.
  - 15 drop chains total in center section.
  - Drop chains are comprised of 2-links of 5/8" long link trawlex, with 1 5/8" headless shackle.

- Total Center section has 14 sections, plus 2 end sections.

- 5/8” Wire clamps in every 3rd section, 4 clamps total.
  - 1st and last clamps spaced 175cm from inside the eyes.
  - Inner 2 clamps spaced 180cm from 1st and last and from each other.

- Discs
  - Rockhopper Discs
    - 30, 16” x 1”, 2.5” thick (±0.5") Rockhopper discs, total in center section.
    - 2 rockhoppers per 60cm section.
    - 1 rockhopper on each end section.
    - Concave side of rockhoppers are to face towards the center.
  - Floppy Discs
    - 116, 16” x 1” Floppy discs, total in center section.
    - 8 floppy discs per 60cm section.
    - 2 floppy discs on each end section.
  - Filler Rubber
    - 5” x 1” filler rubber, tread cut. Fill in all gaps between floppy discs and rockhopper discs.
    - 6” x 2-3/8” filler rubber, tread cut. Used on end sections to cover the sockets.

- Lead Weight
  - 100 lbs total.
  - 80, 1-1/4 lbs lead weights are to be spaced evenly throughout the center section of the sweep.
  - Leads spaced evenly in between the first and last rockhoppers. No lead on end sections.
Wing Sections

- 820cm Eye to Eye.
- 3/4" 6 x 25 stainless steel IWRC wire.
- 3/4" ESCO stainless steel sockets.
- 1, 5" x 2-3/8" x 1/2" stainless steel washer, first item on 1st end section over the socket.
- 5/8" Hammerlocks connect wing sections to the center section.

Drop Chains
- 60cm drop chain spacing.
- 1st drop chain is 25cm from inside of socket eye.
- Last end drop chain is 135cm from inside of socket eye.
- 12 drop chains total in wing sections.
- Drop chains are comprised of 2-links of 5/8" long link Trawlex, with 1 5/8" headless shackle.

Each wing section has 11, 60cm sections and 2 end sections.
- 1st end section, towards the center, is 25cm from inside eye to the first drop chain and is comprised of 1 14" rockhopper, 1 14" floppy, and 6" filler rubber covers the socket.
- Last end section, on the wing end, is 135cm from the last drop chain to inside the eye and is comprised of 4 14" rockhopper, 7 14" floppy discs, 1 5/8" wire clamp between the 20th and 27th rockhoppers, and 30cm of 6" filler rubber from the 27th rockhopper out to the end over the socket.

Each wing section has 4 5/8" wire clamps total.
- 1st clamp goes between the 4th and 5th drop chains.
- 2nd clamp goes between the 7th and 8th drop chains.
- 3rd clamp goes between the 10th and 11th drop chains.
- 4th clamp goes on the last end section, between the 25th and 26th rockhoppers.
Discs

- Rockhopper Discs
  - 27, 14" x 1", 2.5" thick (±0.5") Rockhopper discs, total in each wing section.
  - 2 rockhoppers per 60cm section.
  - 1 rockhopper on 1st end section towards the center.
  - 4 rockhoppers on the last end section.
  - Concave side of rockhoppers are to face towards the center.

- Floppy Discs
  - 52, 14" x 1" Floppy discs, total in each wing section.
  - 4 floppy discs per 60cm section.
  - 1 floppy disc on 1st end section
  - 7 floppy discs on last end section.

- Filler Rubber
  - 5" x 1" filler rubber, tread cut. Fill in all gaps between floppy discs and rockhopper discs, between 1st and 27th rockhoppers.
  - 6" x 2-3/8" filler rubber, tread cut. Used on end sections to cover the sockets. 35cm on last end section from the 27th rockhopper out over the socket. On the 1st end section, cover the socket area after the 5" steel washer.

- Lead Weight
  - 30 lbs total on each wing section.
  - 24, 1-1/4 lbs lead weights are to be spaced evenly between the 20th and 27th rockhoppers.
ROCKHOPPER CENTER SECTION
Section = 890cm, 100lbs Lead

14 Sections (Excluding End Sects.)
60cm Spacing between chains
- Section Makeup -
  2 - 16" x 1", 2.5" thick Rockhopper Discs
  8 - 16" x 1" Floppy Discs
  5" x 1" Filler Rubber (tread cut)

80 - Evenly Spaced, 1-1/4 lbs leads, (100lbs total)

TOTAL CENTER SECTION
30 - 16" x 1", 2.5" thick rockhoppers (2 per section with 1 in end sections)
116 - 16" x 1" floppy discs (8 per section with 2 in the end sections)
(4 floppy between each rockhopper)
80 pieces of 1-1/4lbs lead (100lbs total), evenly spaced in between end rockhoppers.

NOTE: Number of rockhoppers and floppy not illustrated to scale

Clamp in every 3rd section
4, 5/8" Wire Clamps total in center section spaced as shown above
15 drop chains total, drop chains are 2 links of 5/8" long link trawlex and 1 5/8" headless shackle

3/4" 6x25 IWRC STAINLESS STEEL WIRE
3/4" ESCO STAINLESS STEEL SOCKETS

4, 5/8" WIRE CLAMPS
5" x 1" FILLER RUBBER tread cut
80, 1-1/4 lbs LEADS EVENLY SPACED, 100lbs total
6" x 2-3/8" FILLER RUBBER To Cover Sockets on End Sects.
15 HANGING CHAINS EACH 2-LINKS OF 5/8" LONG LINK TRAWLEX + 1, 5/8" HEADLESS SHACKLE

Page 35
ROCKHOPPER SWEEP WING SECTIONS
820cm eye to eye, 30lbs lead

CENTER END

WING END

25cm 60cm 60cm 60cm 60cm 60cm 60cm 60cm 60cm 60cm 60cm 60cm 135cm
clamp clamp clamp clamp clamp clamp

5/8"
Hammerlock
connector

5" x 2 3/8" x 1/2"
steel washer

6" x 2 3/8"
Filler Rubber
before and
after 1st R.H.

Concave Side of Rockhoppers
face towards the center.

5/8"
Hammerlock
c

24, 1 1/4 lbs leads evenly spaced
between 20th and 27th Rockhopper
30lbs total

6" x 2 3/8"
Filler Rubber
after last R.H.

1st END SECTION

-25cm from inside eye to 1st drop chain
-drop chain comprised of 2-links 5/8" Trawlex and
1 5/8"headless shackle.
-1, 5" x 2-3/8" x 1/2" s.s. washer.
-1, 14" x 1" x 2.5" thick Rockhopper.
-2, 14" floppy discs.
-1, 3/4" ESCO s.s. socket
-1, 5/8" hammerlock
-6" x 2-3/8" filler rubber, tread cut, before and
after 1st rockhopper

60cm SECTIONS

-60cm drop chain spacing.
-11 sections total.
-drop chains comprised of 2-links 5/8" Trawlex
and 1 5/8"headless shackle.
-2, 14" x 1" x 2.5" thick Rockhopper.
-4, 14" floppy discs.

LAST END SECTION

-135cm from last drop chain to inside eye.
-1, drop chain comprised of 2-links 5/8" Trawlex and 1
5/8"headless shackle.
-4, 14" x 1" x 2.5" thick Rockhopper.
-7, 14" floppy discs.
-1, 3/4" ESCO s.s. socket.
-5" x 1" filler rubber, tread cut, from drop chain to 27th
rockhopper.
-6" x 2-3/8" filler rubber, tread cut, over socket.